
50 CFR Part 17**Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for *Echinocereus chisoensis* var. *chisoensis***

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The Service has determined that a plant, *Echinocereus chisoensis*

var. *chisoensis* (Chisos Mountain hedgehog cactus), is a threatened species. The only known locality for this cactus is Big Bend National Park, Texas, where an estimated 1,000 plants occur. Due to its low numbers and limited distribution, this cactus is vulnerable to taking, road improvements, and trail construction. Habitat degradation from former grazing, climatic changes, or other undetermined factors may be causing a decline in plant establishment. The determination of threatened status for *Echinocereus chisoensis* var. *chisoensis* implements protection provided by the Endangered Species Act of 1973 (Act), as amended.

EFFECTIVE DATE: October 31, 1988.

ADDRESSES: The complete file for this rule is available for inspection, by

appointment, during normal business hours at the Service's Regional Office of Endangered Species, 500 Gold Avenue, SW., Room 4000, Albuquerque, New Mexico.

FOR FURTHER INFORMATION CONTACT: Charles McDonald, Botanist, Endangered Species Office, P.O. Box 1306, Albuquerque, New Mexico 87103 (505/766-3972 or FTS 474-3972).

SUPPLEMENTARY INFORMATION:

Background

Echinocereus chisoensis var. *chisoensis* (Chisos Mountain hedgehog cactus) is a Chihuahuan Desert plant endemic to Big Bend National Park, Brewster County, Texas. It was first collected in April 1939, by E. Radley

near the Chisos Mountains in Big Bend National Park. W.T. Marshall formally named it *Echinocereus chisoensis* in honor of the type locality (Marshall 1940). Lymon Benson (1969) assigned the taxon to the varietal level, revising the name to *Echinocereus reichenbachii* var. *chisoensis*. Nigel Taylor (1985) considers this taxon sufficiently distinct from the other varieties of *Echinocereus reichenbachii* that he has returned it to *Echinocereus chisoensis* and has included *Echinocereus fobeanus* with it as another variety. Thus, *Echinocereus chisoensis* now consists of *Echinocereus chisoensis* var. *chisoensis* endemic to Big Bend National Park and *Echinocereus chisoensis* var. *fobeanus* from southwestern Coahuila and northeastern Durango, Mexico.

The nomenclature of Benson was used in the listing proposal (52 FR 25275; July 6, 1987), but the equivalent and more recent nomenclature of Taylor is being followed in this final rule.

Echinocereus chisoensis var. *chisoensis* occurs on alluvial flats near the Chisos Mountains at elevations of 595–717 meters (1,050–2,390 feet). Vegetation is very sparse, with total plant cover estimated at 20–30 percent (Heil and Anderson 1982). Commonly associated plants are *Larrea tridentata* (creosote bush), *Agave lecheguilla* (lecheguilla), and *Opuntia schottii* (dog cholla). The Chisos Mountain hedgehog cactus frequently grows on bare soil within spreading clumps of *Opuntia schottii* and is also found in the shade of other associated plants.

The total number of plants of *Echinocereus chisoensis* var. *chisoensis* has been estimated at 1,000 (Heil and Anderson 1982). The plants occur in an area approximately 5 by 17 kilometers (3.1 by 10.6 miles); however, they do not occupy all of the potential habitat. No plants have been found in the bordering States of Chihuahua and Coahuila, Mexico (Heil and Anderson 1982).

This cactus is 7.5–15 centimeters (3–6 inches) tall, with deep green or bluish green stems. The spine arrangement consists of 12–14 radial and 1–4 central spines per cluster. This variety can be distinguished from varieties of *Echinocereus reichenbachii* by the length of the central spines and the whiteness of the spine mass. It can be distinguished from *Echinocereus chisoensis* var. *fobeanus* by its solitary stems and lack of annual stem constrictions. During the flowering period from March to early June, the plants are conspicuous due to the showy tri-colored flowers and the white wool and slender spines of the floral tube (Benson 1982). Petals are red at the base, white at mid-length, and fuchsia at their

tips. Fruits are green with a red tinge, fleshy, and are covered with long white wool and bristles (Evans 1986). Fruits mature from May to August and contain 200–250 seeds (Heil et al. 1985).

The population biology and ecology of this cactus are poorly understood. Some experts (Leuck, Ross, Heil, and Anderson) have proposed that plant numbers are limited by poor seedling establishment (Leuck, Centenary College of Louisiana, pers. comm. 1986; Heil and Anderson 1982). Leuck (1982) and Ross (1982) have suggested that short grass cover is the preferred site for seedling establishment and that grass cover was probably substantially reduced by overgrazing during the period from World War I through World War II. Other experts have suggested that long and short term climatic shifts have caused drier conditions and this may be contributing to a population decline (Zimmerman, Chihuahuan Desert Research Institute, pers. comm. 1986; Evans, Big Bend National Park pers. comm. 1986). Other undetermined factors may also be limiting plant establishment.

Federal action involving this species began with section 12 of the Endangered Species Act of 1973 which directed the Secretary of the Smithsonian Institution to prepare a report on those plants considered to be endangered, threatened, or extinct. This report, designated as House Document No. 94–51, was presented to Congress on January 9, 1975. On July 1, 1975, the Service published a notice in the *Federal Register* (40 FR 27823) of its acceptance of this report as a petition within the context of section 4(c)(2), now section 4(b)(3)(A), of the Act and of its intention thereby to review the status of those plants. *Echinocereus chisoensis* var. *chisoensis* was included as threatened in the Smithsonian report and the July 1, 1975 notice.

On December 15, 1980, (45 FR 82480), and September 27, 1985, (50 FR 39526), the Service published updated notices reviewing the native plants being considered for classification as threatened or endangered. *Echinocereus chisoensis* var. *chisoensis* was included in these notices as a category 1 species. Category 1 comprises taxa for which the Service has sufficient biological information to support proposing them as endangered or threatened species.

Section 4(b)(3)(B) of the Endangered Species Act, as amended in 1982, requires the Secretary to make certain findings on pending petitions within 12 months of their receipt. Section 2(b)(1) of the Act's Amendments of 1982 further requires that all petitions pending on October 12, 1982, be treated as having

newly submitted on that date. These circumstances apply to *Echinocereus chisoensis* var. *chisoensis* because of the acceptance of the 1975 Smithsonian Report as a petition. In October 1983, 1984, 1985, and 1986, the Service made 12-month findings that the petition to list *Echinocereus chisoensis* var. *chisoensis* was warranted but precluded by other listing actions of higher priority. Biological data supplied by Heil and Anderson (1982) fully support a listing of *Echinocereus chisoensis* var. *chisoensis* as threatened. The July 6, 1987, proposal to list *Echinocereus chisoensis* var. *chisoensis* as threatened was based primarily on Heil and Anderson's biological data and constituted the next 12-month finding for this plant.

Summary of Comments and Recommendations

In July 6, 1987, proposed rule and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. Appropriate State agencies, country agencies, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. A newspaper notice was published in the *Alpine Avalanche* on July 30, 1987.

Five comments were received. Comments supporting the proposal were submitted by the Texas Parks and Wildlife Department, the Texas Natural Heritage Program, and Dr. A. Michael Powell, a botanist at Sul Ross State University. Two comments submitted by officers of the Cactus and Succulent Society of America offered no new information and did not take a position on the proposal. The comment from Dr. Powell stated that this experience suggests there may be several thousand of the cacti in Big Bend National Park and that shrubs rather than grasses are the primary nurse plants. *Response:* Surveys and monitoring done in 1986 and 1987 produced actual counts of only 183 plants. Undoubtedly, further surveys will increase this number, but presently, an estimate of 1,000 plants does not seem overly conservative. More information is needed to understand the actual habitat preferences and seedling requirements of this cactus. These studies will be included in recovery planning.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that *Echinocereus chisoensis* var.

chisoensis should be classified as a threatened species. Procedures found at section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations (50 CFR Part 424) promulgated to implement the listing provisions of the Act were followed. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to *Echinocereus chisoensis* (W.T. Marshall) var. *chisoensis* (Chisos Mountain hedgehog cactus) are as follows:

A. The Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range

Former overgrazing may have contributed to a decline in the grass cover, altering the habitat for *Echinocereus chisoensis* var. *chisoensis*. Some experts (Leuck 1982, Ross 1982) believe that reduction in grass cover may have removed the plant's preferred seedling establishment habitat. Without grazing, natural grass re-establishment may create a more favorable environment for seedlings. However, recovery of overgrazed desert rangeland is a slow process and some desert communities never return to their former composition.

Plants occur within 33 meters (100 feet) of a major road and also near a popular park visitation spot. These plants and their habitat are vulnerable to destruction from road maintenance and repair or from trail building by the National Park Service or contractors.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Commercial collectors find *Echinocereus chisoensis* var. *chisoensis* desirable because of its rarity both in the field and in the trade; private individuals may find it desirable for its attractive flowers. Plants are vulnerable to taking because many occur near a major road where they are readily accessible and where they are highly visible during the flowering season. Due to the low number of individual plants, any taking would be detrimental.

C. Disease or Predation

None known.

D. The Inadequacy of Existing Regulatory Mechanisms

National Park Service regulations prohibit taking natural or cultural resources from a National Park, except by permit. Beyond this, the Park Service has no special requirements for protection or management of

Echinocereus chisoensis var. *chisoensis*. All cacti are included on Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Species on Appendix II require a permit from the originating country before being shipped internationally. CITES only applies to international trade and does not regulate commerce either between or within States. *Echinocereus chisoensis* var. *chisoensis* is not currently protected by either Federal or State law.

E. Other Natural or Manmade Factors Affecting its Continued Existence

Scarcity (an estimated 1,000 plants) and limited distribution make this plant vulnerable to both natural and human threats. Any further reduction in plant numbers could reduce the reproductive capabilities and genetic potential of this cactus.

Long or short term climatic changes may be creating drier conditions in the area, possibly contributing to a population decline. Evans (pers. comm. 1986) notes that the spring of 1986 was very dry. As a result, few *Echinocereus chisoensis* var. *chisoensis* flowered or fruited and many looked desiccated. Zimmerman (pers. comm. 1986) has suggested that a long term shift toward drier conditions has created less than adequate reproductive conditions for this cactus.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to make this final rule. Based on this evaluation, the preferred action is to list *Echinocereus chisoensis* var. *chisoensis* as threatened without critical habitat. Although this species has a small population size and limited distribution, threatened, rather than endangered, status seems appropriate because extinction does not appear imminent, and some protection is already provided by the National Park Service. The reasons for not designating critical habitat are discussed below.

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time a species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not prudent for *Echinocereus chisoensis* var. *chisoensis* at this time. As discussed under Factor B in the "Summary of Factors Affecting the Species," this plant is threatened by taking. Publication of critical habitat descriptions and maps would make it

even more vulnerable. The National Park Service is aware of the locations of the plant and the importance of its protection. Habitat protection will be addressed through the recovery process and through section 7 of the Act.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service at the earliest opportunity. Actions that may benefit *Echinocereus chisoensis* var. *chisoensis* include continued monitoring to determine population changes, biological and ecological studies to determine limiting factors, and propagation studies for possible introduction of plants back into native habitat. The protection required of Federal agencies and the prohibitions against taking are discussed in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR Part 402. Section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service. The usual result of a section 7 consultation, if jeopardy is found, is modification and not cancellation of a proposed action. Road improvements or trail construction by the National Park Service or contractors may damage or remove some plants and habitat of *Echinocereus chisoensis* var. *chisoensis*. If planned construction activities may affect this cactus, the National Park Service must enter into consultation with the Service prior to initiation of a project. No other Federal activities are

known or are expected to affect this species.

The Act and its implementing regulations found at 50 CFR 17.71 set forth a series of general trade prohibitions and exceptions that apply to all threatened plants. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to import or export any threatened plant, transport it in interstate or foreign commerce in the course of a commercial activity, sell or offer it for sale in interstate or foreign commerce, or remove it from areas under Federal jurisdiction and reduce it to possession. Certain exceptions can apply to agents of the Service and State conservation agencies. The Act and 50 CFR 17.72 also provide for the issuance of permits to carry out otherwise prohibited activities involving threatened species under certain circumstances. With respect to *Echinocereus chisoensis* var. *chisoensis*, it is anticipated that few trade permits would ever be sought or issued since the species is not common in cultivation or in the wild. Requests for copies of the regulations on plants and inquires regarding them may be addressed to the Permit Branch, Office of Management Authority, U.S. Fish and Wildlife Service, Washington, DC 20240 (703/343-4955).

Echinocereus chisoensis var. *chisoensis* is on Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Species on Appendix II require a permit from the country of

origin prior to export. International trade in this species is minimal. The Service will not review this species to determine if it should be reclassified under CITES.

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983, (48 FR 49244).

References Cited

- Benson, L. 1969. The cacti of the United States and Canada—New names and nomenclature combinations—I. Cactus and Succulent Journal (U.S.) 41:124-128.
- Benson, L. 1982. The cacti of the United States and Canada. Stanford University Press, Stanford, CA. 1044 pp.
- Evans, D.B. 1986. Survey of Chisos pitaya *Echinocereus reichenbachii* var. *chisoensis*. U.S. National Park Service, Big Bend National Park, TX. 18 pp.
- Heil, K.D., and E.F. Anderson. 1982. Status report on *Echinocereus chisoensis*. U.S. Fish and Wildlife Service, Office of Endangered Species. Albuquerque, NM. 19 pp.
- Heil K.D., S. Brack, and J.M. Porter. 1985. The rare and sensitive cacti of Big Bend National Park. U.S. National Park Service, Big Bend National Park, TX. 41 pp.
- Marshall, W.T. 1940. *Echinocereus chisoensis* sp. nov. Cactus and Succulent Journal (U.S.) 12:15.
- Taylor, N.P. 1985. The genus *Echinocereus*. Timber Press, Portland, Oregon. 160 pp.

Author

The primary author of this final rule is Charles McDonald, Endangered Species Office, U.S. Fish and Wildlife Service, P.O. Box 1306, Albuquerque, New Mexico 87103 (505/766-3972 or FTS 474-3972). Status information was provided by K.D. Heil, Navajo Community College, Shiprock, New Mexico, and E.F. Anderson, Whitman College, Walla Walla, Washington.

List of Subjects in 50 CFR Part 17

Endangered and threatened wildlife. Fish, Marine mammals. Plants (agriculture).

Regulation Promulgation

Accordingly, Part 17, Subchapter B of Chapter I, Title 50 of the Code of Federal Regulations, is amended as set forth below:

PART 17—[AMENDED]

1. The authority citation for Part 17 continues to read as follows:

Authority: Pub. L. 93-205, 87 Stat. 884; Pub. L. 94-359, 90 Stat. 911; Pub. L. 95-632, 92 Stat. 3751; Pub. L. 96-159, 93 Stat. 1225; Pub. L. 97-304, 96 Stat. 1411 (16 U.S.C. 1531 *et seq.*); Pub. L. 99-625, 100 Stat. 3500 (1986), unless otherwise noted.

2. Amend § 17.12(h) by adding the following, in alphabetical order under the family Cactaceae, to the List of Endangered and Threatened Plants:

§ 17.12 Endangered and threatened plants.

* * * * *

(h) * * *

| Species | | Historic range | Status | When listed | Critical habitat | Special rules |
|--|--------------------------------------|-------------------|--------|-------------|------------------|---------------|
| Scientific name | Common name | | | | | |
| Cactaceae—Cactus family: | | | | | | |
| <i>Echinocereus chisoensis</i> var. <i>chisoensis</i> (= <i>E. chisoensis</i> = <i>E. reichenbachii</i> var. <i>chisosensis</i>). | Chisos Mountain hedgehog cactus..... | U.S.A. (TX) | T | 335 | NA | NA |

Dated: September 22, 1988.

Susan Recce,

Assistant Secretary for Fish and Wildlife and Parks.

[FR Doc. 88-22329 Filed 9-29-88; 8:45 am]

BILLING CODE 4310-55-M